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From: Shester, Geoff <GShester@oceana.org>
Sent: Friday, February 18, 2022 5:41 PM
To: CEQAResponses
Subject: comments on DEIR for Nordic Aquafarms Aquaculture Project
Attachments: nordic-aquafarms-DEIRcomments2-18-22.pdf

Dear Planning Director Ford,

Please accept the attached comments on the Draft Environmental Impact Report for the proposed Nordic Aquafarms Aquaculture Project.

Thank you for considering these comments, and please feel free to reach out to me if you have any questions.

Sincerely,
Geoff Shester

Geoff Shester, Ph.D. | California Campaign Director and Senior Scientist



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February 18, 2022

Planning Director John Ford
County of Humboldt Planning and Building Department, Planning Division
3015 H Street
Eureka, CA 95501
Submitted via email to: CEQAResponses@co.humboldt.ca.us

RE: Nordic Aquafarms Finfish Aquaculture Project Draft Environmental Impact Report

Dear Planning Director Ford:

Oceana is the largest international marine conservation organization dedicated solely to protecting the world's oceans. We have over 100,000 members in California and have been actively engaged in ocean and fisheries conservation off the US West Coast since 2003. Our science-based organization has been actively engaged in aquaculture regulation and management in several countries where we operate throughout the world. Please accept these comments on the Draft Environmental Impact Report (DEIR) on the proposed Nordic Aquafarms aquaculture project.

We are deeply concerned about the newly proposed aquaculture facility that seeks to produce up to 27,000 metric tons of farmed Atlantic salmon annually at Samoa Point adjacent to Humboldt Bay. To understand the scale, this single location would more than double the entire U.S. production of farmed salmon, which averaged 17,750 metric tons in recent years.¹ This massive scale project threatens sensitive ecosystems, wild fish stocks, and the recreational, commercial, and subsistence fisheries in the Humboldt Bay estuary and Northern California's open ocean ecosystem. The potential harms to the economy, wild fish stocks, habitats, and ecosystems could outweigh any positive economic benefits provided by the project. We share the concerns raised in the February 18, 2022 comment letter by Humboldt Baykeeper, the Coalition for Responsible Transportation Priorities, Surfrider Foundation, the Northcoast Environmental Center, 350 Humboldt and the Environmental Protection Information Center. In addition, we have additional concerns.

California currently does not allow farmed salmon operations in the marine environment due to the unacceptable risks to ocean ecosystems and coastal economies. While we recognize that several components of the proposed project will be in building on land rather than open ocean net pens, the system itself is inherently and unequivocally connected to the ocean ecosystem through inputs and outputs during operations, proximity to the marine environment as well as construction, maintenance, and mitigation efforts. After reviewing the DEIR, we are concerned that the impacts are severely downplayed and underestimated, while there is an overarching false assumption that impacts are either insignificant or will be mitigated. Simply put, most of the risks posed marine-based Atlantic salmon aquaculture are still present with this project due to the proximity to the marine environment, the intake of seawater, the outflows into open ocean, and the biology of Atlantic salmon.

¹ Estimate from NOAA Fisheries "Fisheries of the United States, 2019" report using data from 2013-2018.
<https://www.fisheries.noaa.gov/resource/document/fisheries-united-states-2019>

Atlantic salmon are a non-native species. Any escapes of farmed fish or larvae can harm or displace native fish species in a variety of ways including competition and spread of disease or parasites. Pacific salmon (particularly Chinook and coho salmon) are in trouble in this region, and there are many runs that are threatened or endangered. There is no guarantee that catastrophic events such as earthquakes or tsunamis, as well as human error and other accidents, won't cause fish to escape into close by surrounding ocean and estuary waters. While many aquaculture operations claim to have escape-free safeguards and mitigation, history has shown time and time again that they are subject to failure. Examples such as the major farmed salmon spill by Cooke Aquaculture off Washington state in August 2017 show that despite decades of efforts to develop escape-free systems, major spills are inevitable and the industry consistently does everything it can to hide how bad it was.² Given the many avenues that fish can escape, the outflows into the ocean, the proximity of the operations to the marine environment, and unpredictable natural events it is not a question of "if" but "when" a major spill of farmed salmon will occur with the proposed project. Escapes must be anticipated despite mitigation measures and those impacts to wild stocks should be analyzed in the DEIR accordingly.

Farmed fish incubate and spread diseases to wild populations. Grown in unnatural densities and conditions, farmed salmon are prone to disease outbreaks and parasite amplification, such as sea lice. Among the most pervasive parasites are sea lice, tiny saltwater crustaceans that attach by suction to salmon and leave lesions, lessen resistance to disease, and reduce growth. When salmon farms contain large numbers of crowded adult fish, they can also contain epidemic-level numbers of the lice. While sea lice don't harm humans who eat infested fish, they can be lethal to salmon by creating open sores and infections.

Salmon farming is correlated with a reduction in populations of wild native salmon. "Wild salmon close to fish farms are 73 times more likely to suffer lethal sea lice than juveniles not adjacent to fish farms," according to the Alaska Department of Fish and Game.³ And the department points out a farm can elevate levels of sea lice up to 40 miles from the farming operation itself, which endanger native salmon passing through. Juveniles "catch" the parasites and bear them on their seaward migrations.

These and other pathogens can spread through any connection to the open ocean, including the outflows and leaks. The DEIR essentially dismisses this concern by describing water treatment and filtration without factual demonstration that such methods will eliminate 100% of all pathogens. There should be a serious examination of all potential diseases and pathogens that may originate from the operation examining outbreaks that have occurred worldwide throughout the history of salmon farming, and assess what the worst case scenarios could look like, including a thorough examination of the biological and economic impacts if such diseases are spread to wild fish stocks.

To treat diseases, the use of antibiotics both to prevent prophylactically and to treat bacterial infections is an essential component of farmed salmon aquaculture. The impacts from this antibiotic use on the marine environment and the potential to create antibiotic-resistant bacteria should be thoroughly analyzed. The full suite of antibiotic uses authorized under the proposed project must be presented and analyzed.

² <https://www.seattletimes.com/seattle-news/fish-farm-caused-atlantic-salmon-spill-state-says-then-tried-to-hide-how-bad-it-was/>

³ http://www.adfg.alaska.gov/index.cfm?adfg=wildlifefews.view_article&articles_id=388

In contrast to aquaculture for shellfish and seaweeds, farmed Atlantic salmon need to be fed large amounts of food to grow and survive, which puts more strain either on wild fisheries for forage fish (e.g., anchovy) or on land-based agriculture (e.g., soy, rice, corn, etc.). The simple biological fact is that farmed eat more than they grow, so are inherently a global sink on food supply. Due to the fundamental biology of Atlantic salmon, salmon aquaculture requires high amounts of feed in excess of the salmon ultimately produced. Even if alternative feeds are used such as corn, soy, or rice, that contributes to on water use, pesticides and fertilizers, greenhouse gas emissions and habitat loss, while also diverting food that could be used to feed people. Therefore, even in the best of circumstances, the large amounts of feed used to produce farmed salmon is harmful to ecosystems, and wasteful in the context of the global food supply. The full impacts of all ingredients in the salmon feed at the full scale of production must be analyzed.

The need for feed also places additional pressure on wild fisheries for forage species, such as anchovy and sardines. Forage species are critical to marine ecosystems, supporting larger predators such as sharks, seabirds, dolphins, pinnipeds, and whales, as well as supporting commercial and recreational fish.⁴ The state of California has adopted a precautionary policy on Forage Species, prioritizing and recognizing their critical ecosystem role.⁵ The impacts of additional forage species removals from ocean ecosystems to provide food for 27,000 metric tons of farmed Atlantic salmon production per year must be analyzed.

All U.S. West Coast estuaries and eelgrass beds are designated by NOAA Fisheries as Habitat Areas of Particular Concern, which overlap in Humboldt Bay. The intake of massive amounts of seawater will cause great harm to fish and invertebrate larvae in one of the prime nursery grounds off the Northern California Coast, including important fishery species such as Dungeness crab, Chinook salmon, groundfish and Pacific herring. The impacts of these removals and modification of Essential Fish Habitat are inadequately examined in the DEIR and cannot be mitigated.

In addition, several Essential Fish Habitat Conservation Areas are designated in the vicinity of Humboldt Bay in the open ocean. These include Trinidad Canyon, the Mad River Rough Patch, Samoa Deepwater, Eel River Canyon, Blunts Reef, Mendocino Ridge, Delgada Canyon, and Tolo Bank (See Figure). Oceana participated heavily in the Pacific Fishery Management Council's Essential Fish Habitat processes. We proposed many of these protections based on the importance of these habitats to federally managed groundfish. Due to the high levels of outflows combined with ocean currents, we are concerned with the impacts to benthic areas will extend many miles from the outflow location itself. Therefore, the DEIR must evaluate impacts over a large spatial scale including these EFH conservation areas.

⁴ For a review, see *Little Fish, Big Impact*. 2012 Lenfest Report. https://www.lenfestocean.org/-/media/assets/extranets/lenfest/len_little_fish_big_impact.pdf

⁵ <https://fgc.ca.gov/About/Policies/Fisheries#Forage>



Figure: Essential Fish Habitat Conservation Areas in the vicinity of the proposed Nordic Aquafarms Atlantic salmon farm (shown with red dot).

https://www.habitat.noaa.gov/protection/efh/newInv/docs/pfmc_datasheet.pdf

Furthermore, the project takes place in and could adversely modify critical habitat designated under the Endangered Species Act for several populations of threatened and endangered species including the Southern Distinct Population Segment of green sturgeon, humpback whales, and southern resident orcas.

The environmental impacts of farmed salmon operations have been well documented, and unfortunately are unlikely to be solved with technological innovation. Moving some of the operations onto land may address small portion of the impacts, however, the massive scale of the project and vicinity to sensitive marine areas could cause inevitable harm that ultimately negates the mitigation measures proposed by the project. Throughout the world, salmon aquaculture industry leaders continue to struggle to address impacts of their operations on wild species and ecosystems, and we should not expect the situation to be any different here.

In summary, the environmental impacts of the proposed Nordic Aquafarms farmed Atlantic salmon operation at Humboldt Bay are legitimate, wide-ranging, serious, and well established in the scientific literature. The estuary and marine ecosystems surrounding and affected by the proposed project are exceptional, from the seafloor throughout the water column. We are concerned with the overly optimistic conclusions in the DEIR that effects will be insignificant or can be readily mitigated. These conclusions fail to reflect the wide body of literature and experience with salmon farms throughout the world. Despite the industry's best efforts to mitigate such impacts, the expansion of Atlantic salmon aquaculture will only threaten the sustainability of wild fisheries, native species, ecosystems, and ocean habitats.

Thank you for considering these comments.

Sincerely,

A handwritten signature in black ink that reads "Geoff Shester".

Geoff Shester, Ph.D.
California Campaign Director & Senior Scientist